Immunoglobulin for Hematopoietic Stem Cell Transplant Recipients without Recurrent Infection: Clinical Effectiveness and Guidelines
SUMMARY OF ABSTRACTS

Immunoglobulin for Hematopoietic Stem Cell Transplant Recipients

Authors: Calvin Young, Mary-Doug Wright


Acknowledgments:

Disclaimer: The information in this document is intended to help Canadian health care decision-makers, health care professionals, health systems leaders, and policy-makers make well-informed decisions and thereby improve the quality of health care services. While patients and others may access this document, the document is made available for informational purposes only and no representations or warranties are made with respect to its fitness for any particular purpose. The information in this document should not be used as a substitute for professional medical advice or as a substitute for the application of clinical judgment in respect of the care of a particular patient or other professional judgment in any decision-making process. The Canadian Agency for Drugs and Technologies in Health (CADTH) does not endorse any information, drugs, therapies, treatments, products, processes, or services.

While care has been taken to ensure that the information prepared by CADTH in this document is accurate, complete, and up-to-date as at the applicable date the material was first published by CADTH, CADTH does not make any guarantees to that effect. CADTH does not guarantee and is not responsible for the quality, currency, propriety, accuracy, or reasonableness of any statements, information, or conclusions contained in any third-party materials used in preparing this document. The views and opinions of third parties published in this document do not necessarily state or reflect those of CADTH.

CADTH is not responsible for any errors, omissions, injury, loss, or damage arising from or relating to the use (or misuse) of any information, statements, or conclusions contained in or implied by the contents of this document or any of the source materials.

This document may contain links to third-party websites. CADTH does not have control over the content of such sites. Use of third-party sites is governed by the third-party website owners’ own terms and conditions set out for such sites. CADTH does not make any guarantee with respect to any information contained on such third-party sites and CADTH is not responsible for any injury, loss, or damage suffered as a result of using such third-party sites. CADTH has no responsibility for the collection, use, and disclosure of personal information by third-party sites.

Subject to the aforementioned limitations, the views expressed herein are those of CADTH and do not necessarily represent the views of Canada’s federal, provincial, or territorial governments or any third party supplier of information.

This document is prepared and intended for use in the context of the Canadian health care system. The use of this document outside of Canada is done so at the user’s own risk.

This disclaimer and any questions or matters of any nature arising from or relating to the content or use (or misuse) of this document will be governed by and interpreted in accordance with the laws of the Province of Ontario and the laws of Canada applicable therein, and all proceedings shall be subject to the exclusive jurisdiction of the courts of the Province of Ontario, Canada.

The copyright and other intellectual property rights in this document are owned by CADTH and its licensors. These rights are protected by the Canadian Copyright Act and other national and international laws and agreements. Users are permitted to make copies of this document for non-commercial purposes only, provided it is not modified when reproduced and appropriate credit is given to CADTH and its licensors.

About CADTH: CADTH is an independent, not-for-profit organization responsible for providing Canada’s health care decision-makers with objective evidence to help make informed decisions about the optimal use of drugs, medical devices, diagnostics, and procedures in our health care system.
Research Questions

1. What is the clinical effectiveness of prophylactic immunoglobulin for hematopoietic stem cell transplant recipients without recurrent infection?

2. What are the evidence-based guidelines regarding the use of prophylactic immunoglobulin for hematopoietic stem cell transplant recipients without recurrent infection?

Key Findings

Two non-randomized studies were identified regarding the clinical effectiveness of prophylactic immunoglobulin replacement to hematopoietic stem cell transplant recipients in the absence of recurrent infections.

Methods

A limited literature search was conducted on key resources including PubMed, The Cochrane Library, University of York Centre for Reviews and Dissemination (CRD) databases, Canadian and major international health technology agencies, as well as a focused Internet search. No filters were applied to limit the retrieval by study type. Where possible, retrieval was limited to the human population. The search was also limited to English language documents published between January 1, 2012 and March 7, 2017. Internet links were provided, where available.

Selection Criteria

One reviewer screened citations and selected studies based on the inclusion criteria presented in Table 1.

Table 1: Selection Criteria

<table>
<thead>
<tr>
<th>Population</th>
<th>Hematopoietic stem cell recipients without recurrent infection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intervention</td>
<td>Immunoglobulin (any route of administration)</td>
</tr>
<tr>
<td>Comparator</td>
<td>No immunoglobulin; standard care</td>
</tr>
<tr>
<td>Outcomes</td>
<td>Clinical effectiveness (e.g. infection rate), evidence-based guidelines</td>
</tr>
<tr>
<td>Study Designs</td>
<td>Health technology assessments, systematic reviews, meta-analyses, randomized controlled trials, non-randomized studies, evidence-based guidelines</td>
</tr>
</tbody>
</table>

Results

Rapid Response reports are organized so that the higher quality evidence is presented first. Therefore, health technology assessment reports, systematic reviews, and meta-analyses are presented first. These are followed by randomized controlled trials, non-randomized studies, and evidence-based guidelines.

Two non-randomized studies were identified regarding the clinical effectiveness of prophylactic immunoglobulin replacement to hematopoietic stem cell transplant recipients in the absence of recurrent infections. No relevant health technology
assessments, systematic reviews, meta-analyses, randomized controlled trials, or evidence-based guidelines were identified.

Additional references of potential interest are provided in the appendix.

**Overall Summary of Findings**

One non-randomized study\(^1\) retrospectively reviewed the role of immunoglobulin prophylaxis for prevention of cytomegalovirus infection in pediatric hematopoietic stem cell transplantation recipients. The results indicated that prophylactic immunoglobulin was effective in preventing cytomegalovirus following hematopoietic stem cell transplantation (particularly in patients that were conditioned with total body irradiation prior to transplant). The authors concluded that children and young adults who undergo hematopoietic stem cell transplantation with total body irradiation may need a preemptive regimen of anti-CMV treatment, if they do not get IV immunoglobulin prophylaxis.\(^1\)

A second non-randomized study\(^2\) retrospectively reviewed the incidence of infection according to intravenous immunoglobulin use in autologous hematopoietic stem cell transplant recipients with multiple myeloma. The authors of the study observed that the incidence of post-transplant infection was not statistically different according to immunoglobulin use, suggesting that prophylactic immunoglobulin did not exert a protective effect.\(^2\)

**References Summarized**

**Health Technology Assessments**

No literature identified.

**Systematic Reviews and Meta-analyses**

No literature identified.

**Randomized Controlled Trials**

No literature identified.

**Non-Randomized Studies**


**Guidelines and Recommendations**

No literature identified.
Appendix — Further Information

Systematic Reviews

Alternate Outcomes

   PubMed: PM27260872

Non-Randomized Studies

Alternate Interventions

   PM:26614176

Alternate Outcomes

   PM:22081487

Clinical Practice Guidelines – Unclear Methodology


Review Articles

   PM:27751936

   PM:27344206